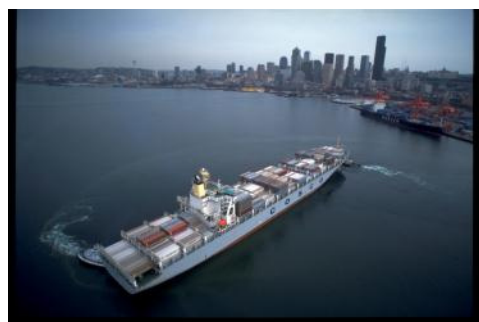


Washington State Freight Mobility Plan

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Why are we developing the Washington State Freight Mobility Plan now?

Washington State's economic recovery depends on stronger freight systems:

- \$37 million of freight moves on Washington roadways every hour of every day.
- Washington's freight transportation network supported 1.46 million jobs in freight-dependent industries that produced \$129 billion in regional domestic product in 2010.
- Washington is one of the top five most trade dependent states in the nation, with \$111.5 billion in exports in 2011.

Policy basis for the State Freight Plan:

- State law requires the Washington State Department of Transportation (WSDOT) to develop a State Freight Mobility Plan; please see RCW 47-06-045.
- The Moving Ahead for Progress in the 21st Century (MAP-21) Act encourages states to prepare freight plans and provides direction for elements of the plan. Under Section 1116, the Secretary may increase the federal share payable for eligible freight projects in State Freight Plans.

Washington State Freight Mobility Plan

Goals:

The Washington State Freight Mobility Plan will develop and prioritize freight transportation system improvement strategies that support and enhance trade and sustainable economic growth, safety, the environment, and goods delivery needs in the state.

Through the State Freight Plan, WSDOT will:

- Meet federal MAP-21 guidance for State Freight Plans.
- Make a strong case for funding Washington state's freight priority projects in future federal and state transportation budget bills and programs.
- Guide capital and operating investments in the state's freight systems.

Objectives:

- Urban goods movement systems that support jobs, the economy, and clean air for all, and provide goods delivery to residents and businesses.
- Washington's competitive position as a Global Gateway to the nation, and the state and national Export Initiatives.
- Rural economies' farm-to-market, manufacturing and resource industry sectors

The Washington State Freight Plan

Key New Deliverables

The Washington State Freight Plan has:

1. Identified the Washington State Freight Economic Corridors.
2. Integrated freight elements of other state transportation plans into one multi-modal freight plan. For example the Freight Plan will include the freight rail system analysis, needs and recommendations recently developed in the Washington State Rail Plan.
3. Set measurable freight performance goals for the State Truck and Waterway Freight Economic Corridors.
4. Developed and tested methods to analyze the economic impacts of truck freight improvements on highways.
5. Systematically analyzed current performance gaps and needs on highways in State Truck Freight Economic Corridors.
6. Developed a new process to include Tribal, Metropolitan Planning Organization (MPO), Regional Transportation Planning Organization (RTPO), port and state freight strategies to improve performance on the Washington State Economic Freight Corridors in the Plan.

1. Identifying the Washington State Freight Economic Freight Corridors

Washington State Truck Freight Economic Corridors –

WSDOT worked with three State Freight Plan Technical Teams; Tribes; every MPO and RTPO technical committee in the state; many cities, counties and ports, and the Washington State Freight Advisory Committee to define the elements of the State Truck Freight Economic Corridors:

1. High volume, based on the State Freight Goods and Transportation System (FGTS):
 - T-1 corridors carrying more than 10 million tons per year
 - T-2 corridors carrying 4 to 10 million tons per year
2. Resiliency detours for very high-volume corridors subject to closure, and
3. First or last mile connector routes from high-volume freight corridors to freight-intensive land use such as industrial-zoned land, agricultural processing centers, intermodal and military facilities.

Detailed maps of the Washington State Freight Economic Corridors may be found at <http://www.wsdot.wa.gov/Freight/EconCorridors.htm>

Preliminary Identification of the State's First and Last Mile Truck Connector Routes

The Freight Plan Technical Teams developed connectivity criteria to identify lower-volume truck routes that should be included in the Truck Freight Economic Corridors to ensure that freight-intensive land uses are connected to high volume routes. The criteria for first/last mile truck routes are:

- Statewide:
 - To-and-from T-1 and T-2 truck routes and strategic U.S. defense facilities.
 - Over-dimensional truck freight routes that connect the state's significant intermodal facilities to the T-1 and T-2 highway system.
- In urban areas:
 - To-and-from the Interstate system and the (1) closest major airport with air freight service, (2) marine terminals, ports, barge loaders and other intermodal facilities, and (3) warehouse/industrial lands.
 - From high-volume urban freight intermodal facilities to other urban intermodal facilities.
- In rural areas:
 - To-and-from state freight hubs located within five miles of T-1 and T-2 highways; freight hubs are defined as: (1) agricultural processing centers, (2) distribution centers, (3) intermodal facilities, and (4) industrial/commercial zoned land.
 - Routes that carry 1 million tons for four consecutive months of the year (reflecting seasonality) of agricultural, timber or other resource industry sector products.

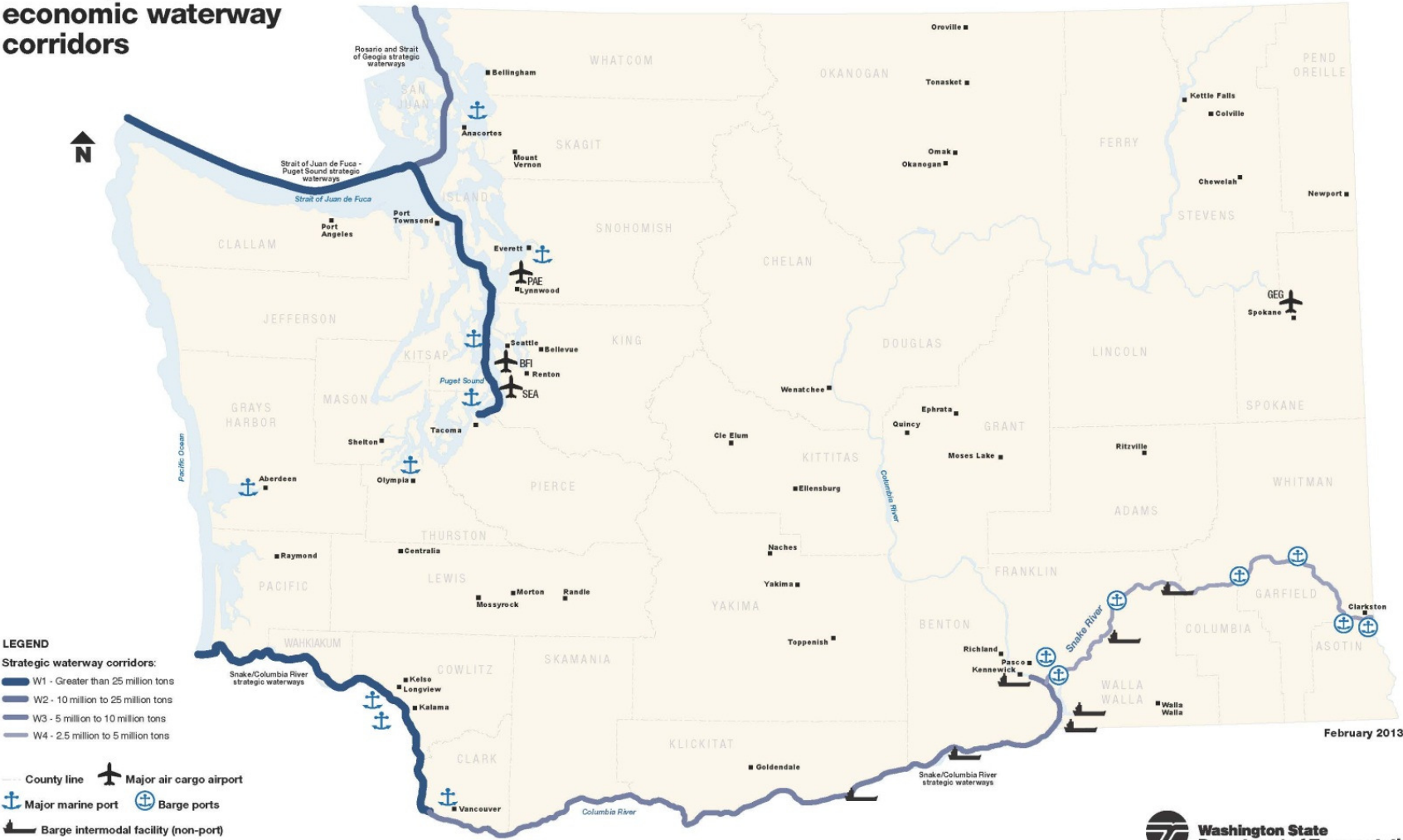


Washington state economic rail corridors



Source: WSDOT Freight Systems Division – 2012 Freight Rail Data.

Washington state economic waterway corridors



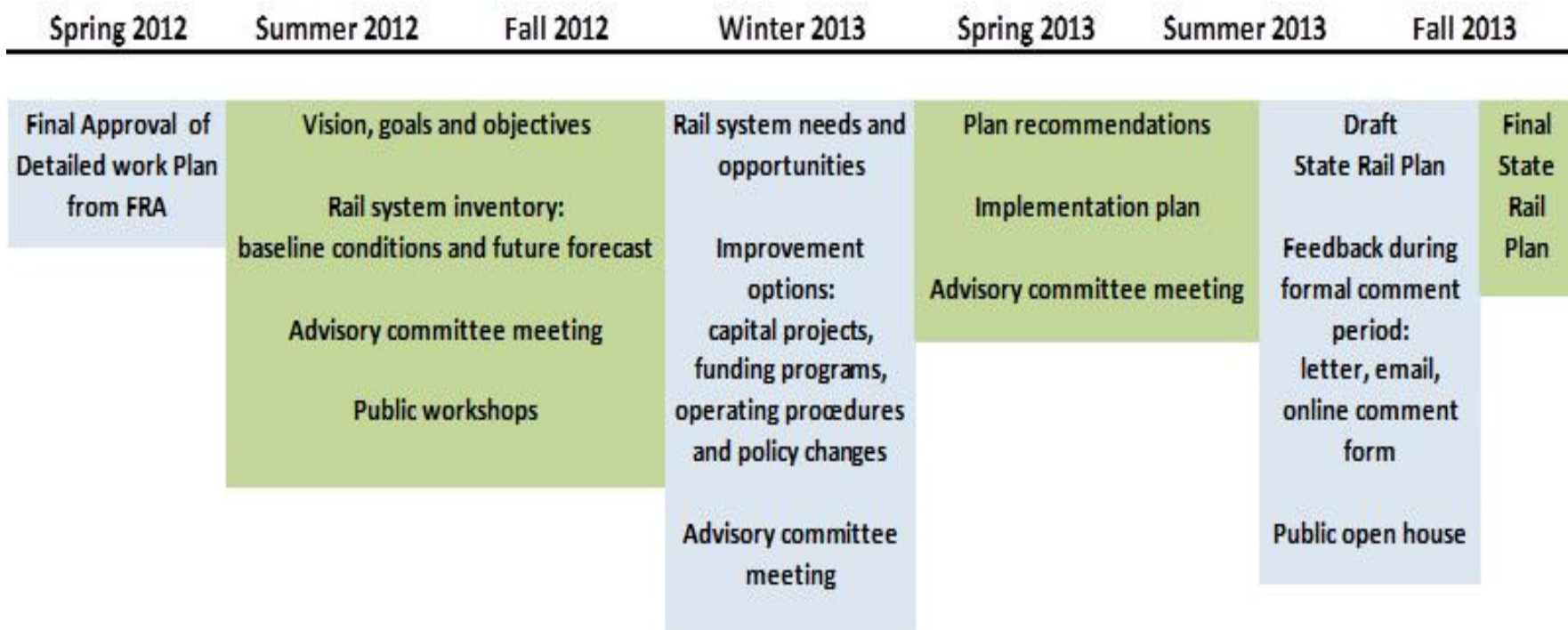
Source: WSDOT State Rail and Marine Office – 2009 Strategic Freight Waterway Corridors in Washington State.

February 2013



2. How Will the State Rail Plan Inform the Freight Plan?

Rail Plan Timeline -



2014 and beyond – Plan Implementation

Incorporate results into State Freight Mobility Plan and Washington Transportation Plan.

Continue collaborative planning with stakeholders and partners to refine and focus investment priorities.

Initiate scoping and project development to prepare for future funding opportunities.

3. Freight System Performance Goals

The Moving Ahead for Progress in the 21st Century (MAP-21) Act freight policy goals (Section 1115) are focused on the national freight network and are to:

- Strengthen the contribution of the national freight network to the economic competitiveness of the U.S.
- Reduce congestion
- Increase productivity
- Improve safety, security and resilience
- Improve the state of good repair
- Use advanced technology to improve safety and efficiency
- Incorporate concepts of performance, innovation, competition and accountability into the operation and maintenance of the network
- Improve economic efficiency
- Reduce environmental impacts

MAP-21 freight movement and economic vitality performance goals (Section 1203) are to:

- Improve the national freight network
- Strengthen the ability of rural communities to access national and international trade markets
- Support regional economic development



What are the Agency Roles to Develop National Truck Freight Performance Measures?

- Under MAP-21, for the first time all state departments of transportation (DOTs) and Metropolitan Planning Organizations (MPOs) are required to track and report performance data to the U.S. DOT.
- The U.S. Secretary of Transportation sets the measures which will be applied to the Highway Safety Improvement Program, the National Highway Performance Program, the Congestion Mitigation and Air Quality (CMAQ) Program, and the National Freight Movement Program.
- State DOTs and MPOs are expected to coordinate to set state performance targets. State must set their targets one year after federal rulemaking is final.

Revised Rule-Making Schedule for MAP-21 Performance Measures			
Rules for all five performance measure categories will be effective in spring 2015			Freight, System Performance, and CMAQ
Measures	Safety	Infrastructure	
Oct - Dec 2012	Consultation / Notice of proposed rule-making		
Jan - Mar 2013			
Apr - Jun 2013			
Jul - Sep 2013			
Oct - Dec 2013			
Jan - Mar 2014	Final rule	Comments	
Apr - Jun 2014		Final rule	Comments
Jul - Sep 2014			Final rule
Oct - Dec 2014			
Jan - Mar 2015			
Source: Jeffrey Paniati, Federal Highway Administration, January 2013			

State DOTs Recommend Two National Truck Freight Performance Measures

- The American Association of Highway Transportation Professionals (AASHTO) developed and recommended that the U.S. Secretary of Transportation adopt two truck freight performance measures for the interstate system, as directed in MAP-21 Section 1203, 150(c)(6). They are:
 1. Annual Hours of Truck Delay (AHTD)—Travel time above the congestion threshold in units of vehicle-hours for Trucks on the Interstate Highway System.
 2. Truck Reliability Index (RI_{80})—The RI is defined as the ratio of the total truck travel time needed to ensure on-time arrival to the agency-determined threshold travel time.
- These were prioritized because they:
 - Align with MAP-21 and State freight policy goals,
 - Drive progress towards freight customers' prioritized performance goals,
 - Are measurable; states have data to measure them on the Interstate system as required under MAP-21.



What are the Washington State Freight Plan Truck Performance Measures?

The Washington State Department of Transportation (WSDOT) organized and supported three Technical Teams focused on Urban Goods Movement, Rural Economies, and the state's Global Gateways to identify and prioritize the state's truck freight performance goals.

Over 60 representatives of the state's key freight-dependent industry sectors, freight carriers, local governments and ports, air quality associations, Washington State Patrol, labor and academic experts served on the Technical Teams.

They determined that six performance goals are strongly aligned with both state and federal freight policies, and are the most important to freight system customers in Washington State.



These metrics will be used to measure the performance of the Truck Freight Economic Corridors in the Freight Plan.*

Reducing:

1. Truck travel time **
2. Direct truck operating costs
3. Truck engine emissions

Improving:

4. Economic output
5. Network resiliency
6. Reliability**

*The Freight Plan will incorporate information about highway infrastructure and safety performance from the Washington State Highway System and Target Zero: Strategic Highway Safety Plans.

** AASHTO-recommended metrics to measure performance on the interstate system.

What Measures May Be Used to Track Freight Rail Performance in the Future?

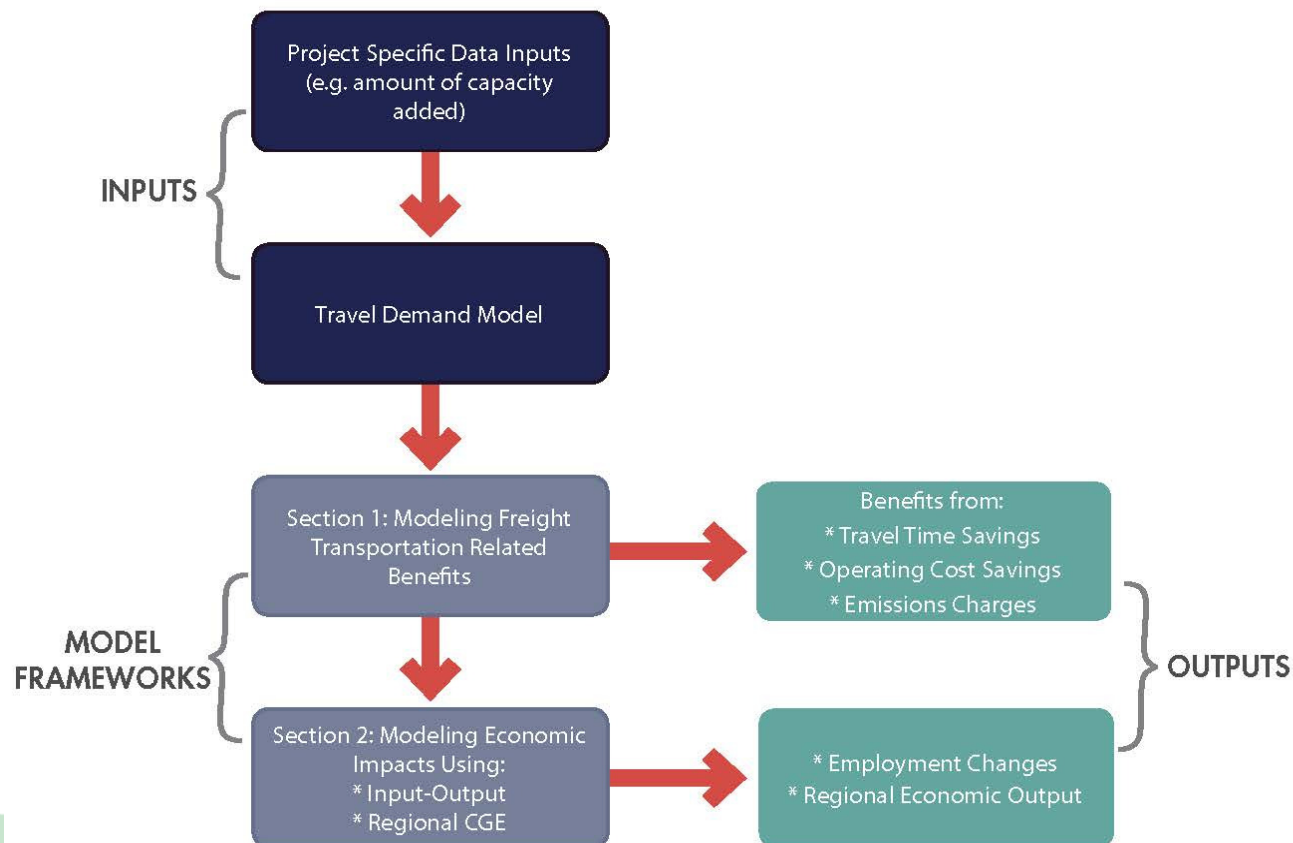
- The Washington State Rail Plan is identifying rail system needs including:
 - Ensuring capacity meets future demand,
 - Preserving existing capacity and infrastructure, and
 - Enhancing the efficiency and reliability of existing services.
- In the future, WSDOT will work with stakeholders to develop freight rail performance measures to gauge progress towards meeting these needs.
- Mainline freight rail performance measures may include (as reported by railroads):
 - Average speed for trains carrying five types of commodities, system-wide,
 - Hours of dwell time at key terminals,
 - Number of cars on the system by both car type and equipment ownership.
- As the steward of state-owned freight assets, WSDOT may report on efficiency by measuring the percentage of the system that:
 - Is operational at 25 miles per hour,
 - Can support modern 286,000-pound cars.

What are the Washington State Freight Plan Waterway Performance Goals and Measures?

- Performance goals for the state's coastal deep-draft and shallow harbors and waterways, and the Columbia-Snake River waterway include improving the state of good repair by:
 - Maintaining the federally authorized navigation channel depths, and
 - Blocking the spread of invasive species.

4. How Can We Predict How Investments Will Affect Truck Freight Performance?

The State Freight Plan developed and tested new methodologies to model changes in truck travel times, economic impacts and emissions for large highway project and project package proposals.



5. MAP-21 Directs States to Analyze Freight Bottlenecks in Freight Plans

The Moving Ahead for Progress in the 21st Century Act (MAP-21) guidance for State Freight Plans says:

- “... A State Freight Plan must include the performance measures that will guide the freight-related transportation investment decisions of the State.
- The Department recommends that this discussion also include an analysis of the conditions and performance of the State’s freight transportation system.
- This analysis would include the identification of bottlenecks in the freight transportation system that:
 - cause delays and unreliability in freight movements, as well as other specific locations that
 - are in a poor state of good repair,
 - create safety hazards,
 - or create other performance problems.”

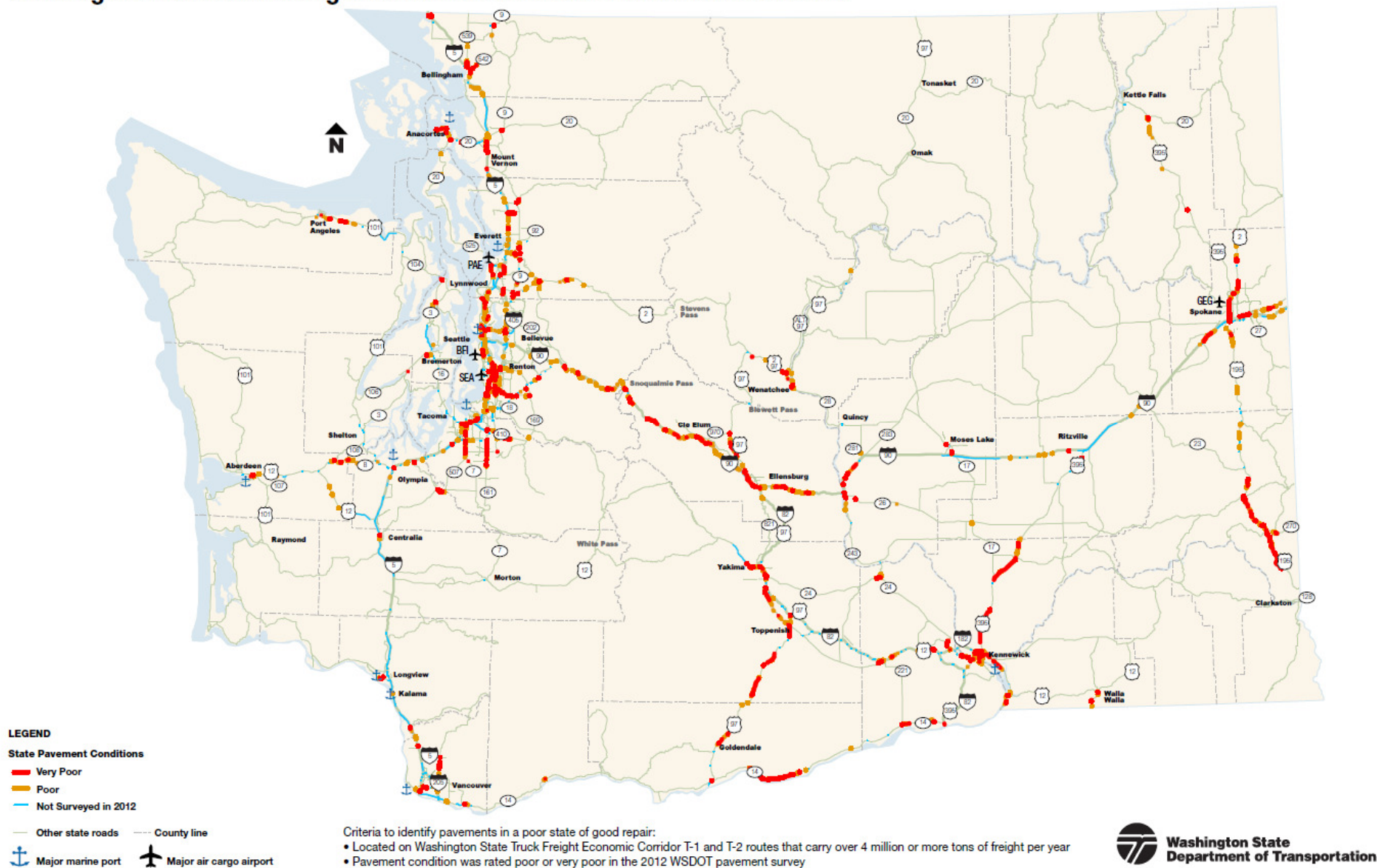
Truck Freight Highway Bottlenecks

To begin to prioritize truck freight system needs, WSDOT analyzed nine categories of truck bottlenecks on highways in the Washington State Truck Freight Economic Corridors:

1. Safety needs, as part of the Target Zero program
2. Pavement locations in a poor state of repair
3. Bridges in a poor state of repair
4. Legal load restrictions
5. Clearance restrictions for over-height goods movement
6. Resiliency bottlenecks
7. Truck slow-speed locations on freeways in urban areas
8. Capacity needs on major truck highways
9. Truck slow-speed locations on signalized highways in urban areas

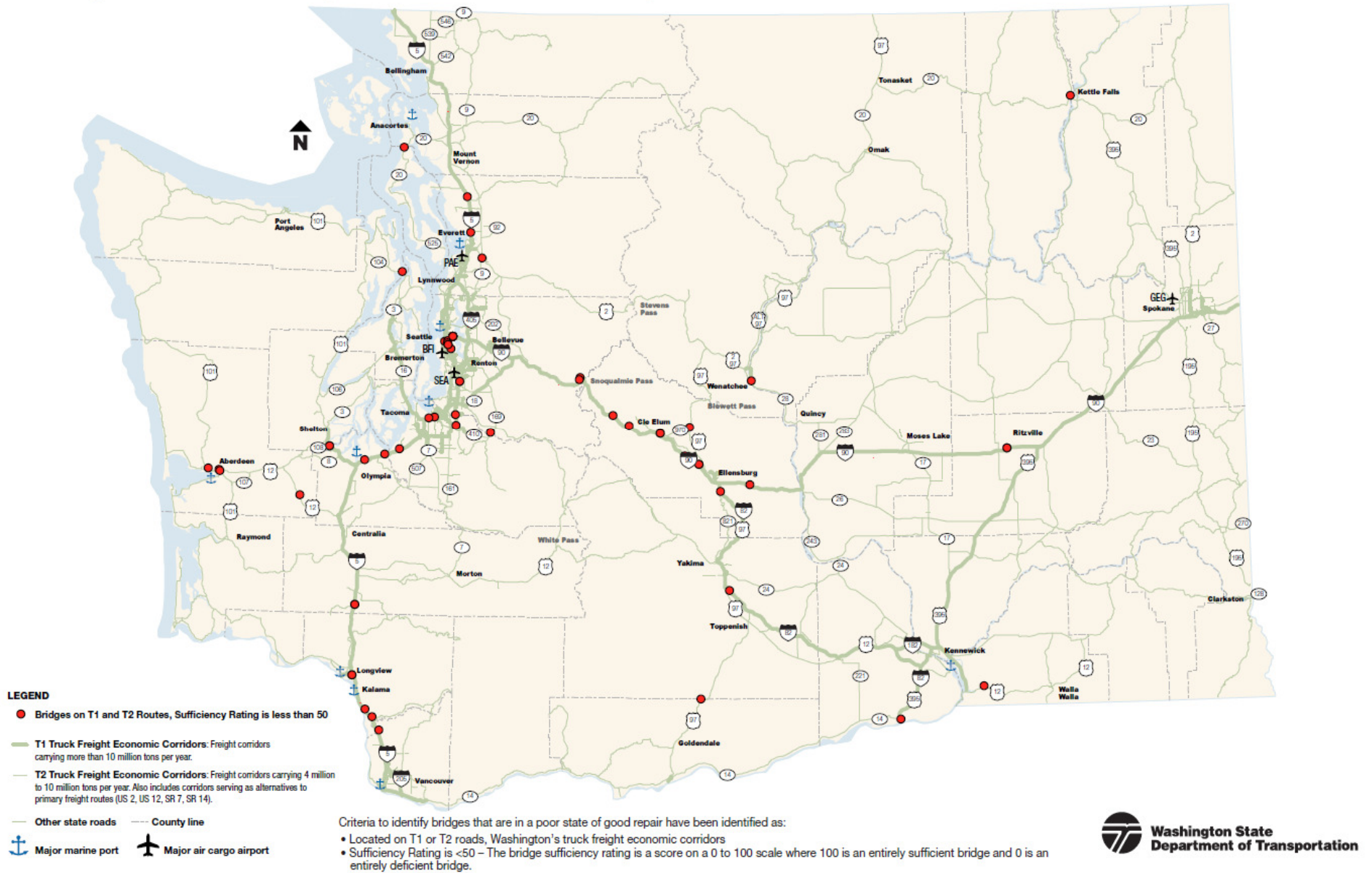
Washington State Truck Freight Economic Corridors: Pavement Conditions

August 2013

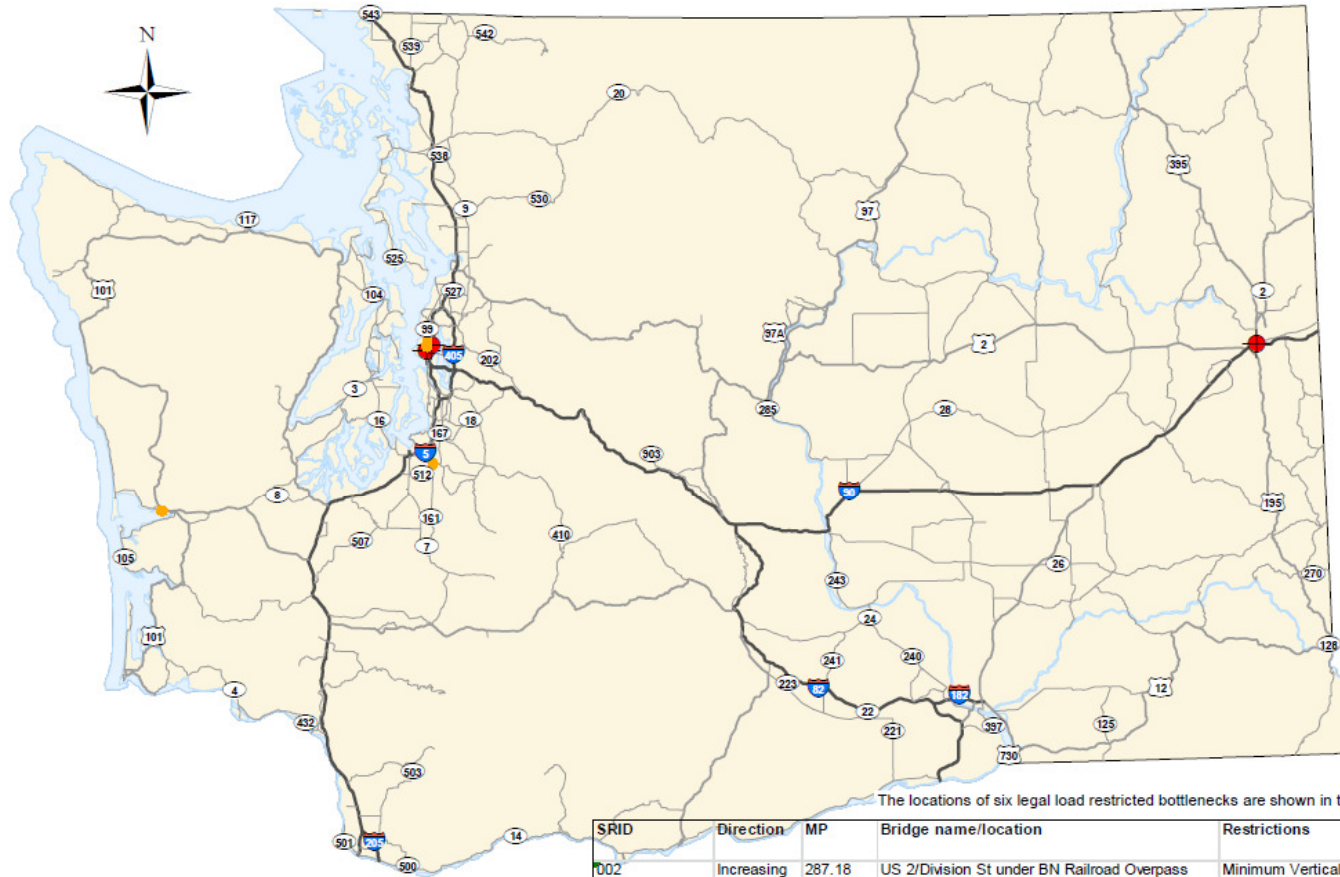


Washington State Truck Freight Economic Corridors: Bridge Need Locations

August 2013



Washington State Truck Freight Economic Corridors: Legal Load Restrictions



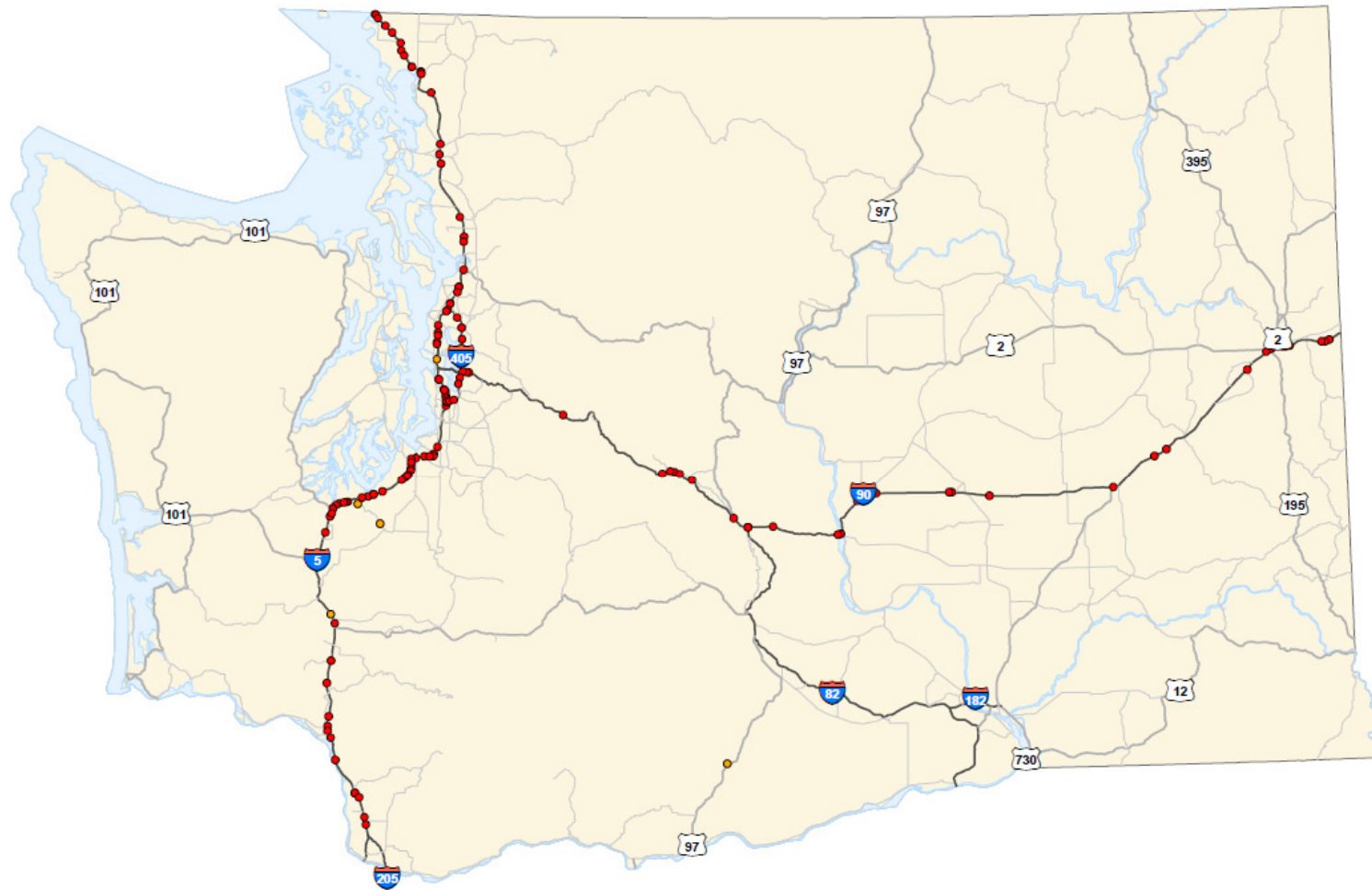
The locations of six legal load restricted bottlenecks are shown in the table below:

SRID	Direction	MP	Bridge name/location	Restrictions	FGTS 2011
002	Increasing	287.18	US 2/Division St under BN Railroad Overpass	Minimum Vertical Clearance 13'5"	T-2
099	Both	35.1	SR 99 under N 41st St /Aurora Pedestrian Bridge	Minimum Vertical Clearance 13'5"	T-2
101COABERDN	Increasing	87.99	US 101 Hoquiam River - Simpson Bridge	Posted weight restriction: Straight Truck - 25 tons, Truck / Semitrailer - 36 tons, Truck / Trailer - 40 tons, Total Weight Limit 105,500 lbs	T-2
522	Increasing	0.08	8th N Ramp Bridge	Minimum Vertical Clearance 13'11"	T-2
167	Both	6.4B	Puyallup River, 0.2 S JCT SR 161	Total Weight Limit 105,500 lbs, Trucks restricted to right lane	T-2
99	Both	29.84	Alaskan Way Viaduct, 3.8 mi. North of Jct SR 509	Total Weight Limit 105,500 lbs, Trucks restricted to right lane	T-1

Legal Load Restricted Bottlenecks

- Height clearance less than 14 feet
- Weight restricted equal to or below 105,500 lbs

Over-height Truck Bottlenecks with Clearances Less Than 17 feet in Washington State



- Bottlenecks on I-5, I-90, and I-405 with height clearances less than 17 feet
- Truck bottlenecks identified in WSDOT Permit Office Oversize Overweight Survey

Please note that the 17-foot clearance criteria was recommended by trucking companies carrying over-dimensional loads in the WSDOT Permit Office survey completed June, 2013

Washington State Truck Freight Economic Corridors: Resiliency Bottlenecks



Resiliency Bottlenecks

- Resiliency bottleneck criteria:
- 1. Located on T-1 or T-2 highways, and an average of at least 5,000 trucks per day
 - 2. Caused by severe weather (flooding, avalanche control)
 - 3. Corridor has had at least one full closure lasting longer than 24 hours in a rolling 20-year period

The locations of two resiliency bottlenecks are shown in the table below:

Number	Route ID	Begin milepost	End milepost
1	Interstate 5	68	88
2	Interstate 90	34	106

Washington State Truck Freight Economic Corridors: Truck Slow Speed Locations on Freeways, and Capacity Needs

Truck Slow Speed Bottleneck Criteria:

1. Located on freeways carrying four million or more tons of freight per year, and
2. More than 50% of sampled trucks are traveling below 60% of posted speed

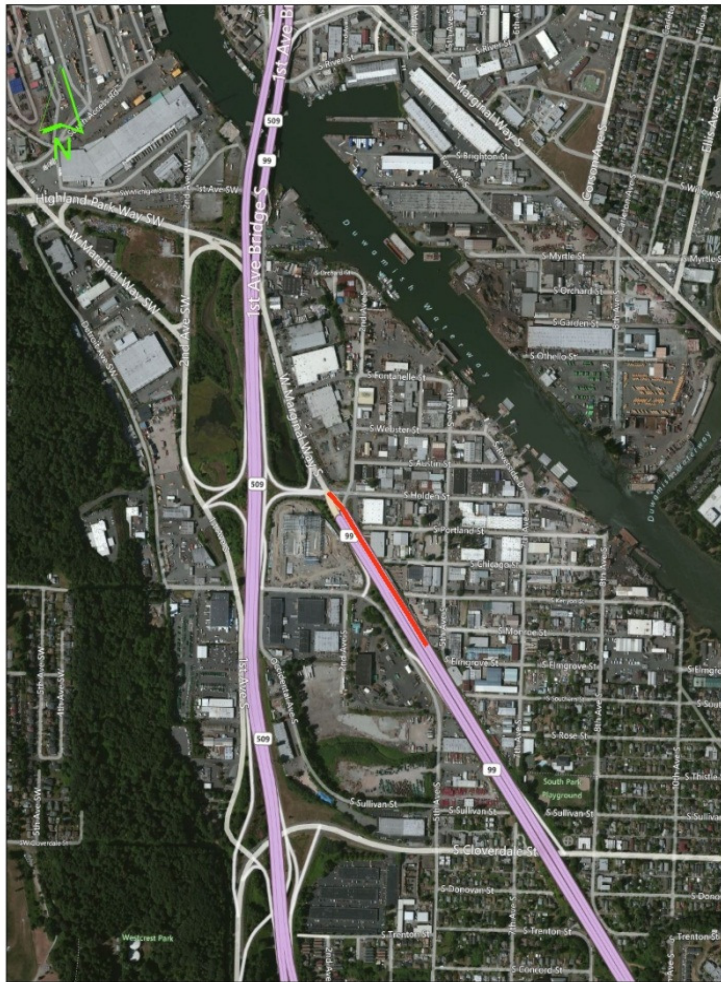
Major Truck Corridor Capacity Needs:

1. Highway 167
2. Highway 509
3. Spokane North-South Freeway



Washington State Truck Freight Economic Corridors:

Example of Truck Slow Speed Bottleneck on Traffic-Controlled Highway



- ▶ Location: SR 99 northbound, south of 1st Avenue S. Bridge, Seattle, WA
- ▶ Length: 0.26 mile
- ▶ Daily truck volume: 3,900; T-1 corridor
- ▶ Truck percentage of total traffic: 13%
- ▶ Average truck travel speed: 22 mph
- ▶ Posted speed: 40 mph
- ▶ Percentage of sample trucks traveling below 60% of posted speed limit: 63%

6. The Washington State Freight Plan Will Include Regional, Tribal and Port Freight Improvement Strategies

WSDOT, the Freight Mobility Strategic Investment Board (FMSIB) and the State Freight Advisory Committee (a standing subcommittee of FMSIB), and the FHWA Division Office have jointly developed a process to include Tribal and regional freight project proposals in the Washington State Freight Plan.

MAP-21 Section 1116 states that the U.S. DOT Secretary may increase the Federal share payable for any project to 95 percent for projects on the Interstate System and 90 percent for any other project if the Secretary certifies that the project meets the Act's requirements. In Washington State, on average, local projects receive approximately 40 percent federal match.

To be eligible under Section 1116, the freight project must:

1. Demonstrate the improvement made by the project to the efficient movement of freight, including making progress towards meeting performance targets for freight movement established under section 150(d) of title 23, United States Code, and
2. Be identified in a State freight plan developed pursuant to Section 1118 of MAP-21.

Regional, Tribal and Port Freight Improvement Strategies

WSDOT respects and relies on MPOs and RTPOs, Tribal, and Port planning and project prioritization processes. Therefore freight projects submitted for inclusion in the State Freight Plan must be in:

- Tribal or MPO/RTPO Transportation Improvement Plans or their Long-Range Transportation Plans, or
- Port plans.

FMSIB has a proven project evaluation process for local freight projects, and WSDOT will include a fiscally-constrained prioritized list of near-term freight projects developed by FMSIB and/or its standing committee, the Washington State Freight Advisory Committee (FAC), in the Freight Plan. The Plan may also include a longer-term list developed by the FAC.

The deadline for project submittal is October 31, 2013. WSDOT will update the projects included in the State Freight Plan every two years, so there will be additional opportunities to submit new project information.

We're very interested in your feedback.

Questions?

For more information, please contact:

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Washington State Freight Mobility Plan website:

<http://www.wsdot.wa.gov/Freight/freightmobilityplan>



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